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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,793

09/10/2003

Mark R. Fryc

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EXAMINER

LEWIS, KIANDRA CHARLE

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/658,793

Applicant(s)

FRYE ET AL.

Examiner

Kiandra C. Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/10/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-35 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 26-35 and 37-39 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/13/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 5/11/2006 has been entered.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 5/11/2006 was filed after the mailing date of the Notice of Allowance on 2/22/2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **oxygen gas delivery device that is a multi-lumen annular conduit** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 35 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites the limitation that the "apparatus of claim 22, further comprising a conserving device". The base claim 22 however already has this limitation of a conserving device as stated in

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line 8 of claim 22. If the applicant is claiming a second conserving device the claim should be amended accordingly.

5. Claim 38 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim recites a limitation that is already apparent in the base claim.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claim 32 recites the limitation "said oxygen gas delivery device" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim. The independent claim 22 does not have the limitation of an oxygen gas delivery device. Additionally, it is unclear as to whether the oxygen gas deliver device is in reference to the entire claimed invention a specific element within the apparatus. The claim will be examined as if the oxygen gas delivery device is an element within the claimed invention such as a mask or nasal cannula.

Claim Rejections - 35 USC § 103

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 22, 29, 30, 32, 33, 34, 35, 37, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicastro (GB 1185199).

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12. **As to claims 22**, GB 1,185,199 discloses a portable apparatus for converting liquid oxygen (LOX) in gaseous form or breathing gas. He discloses a portable LOX apparatus (**Fig. 1**),

a portable container (**5**) that is capable of receiving and transferring LOX (**pg 2, lines 45-48**)

through a transfer connector (**72,33**). The device further has another transfer connector (**48,12**) that is capable of transferring oxygen gas to an oxygen delivery device. Nicastro also discloses

an economizer valve (**30**) that balances the gaseous and liquid oxygen withdrawal (**page 2, lines 70-78**) and

a conserving device (**36**).

The prior art does not specifically teach that the apparatus can hold 1 pound of LOX when fully charged or that it can last approximately 10 hours. However, the reference does state that the use of the oxygen delivery device is intended for miners (**page 3, lines 97-101**). If they are to hold this device on their back while working it would be obvious to one having ordinary skill in the art at the time of the invention that the apparatus must be light in weight and must last a long period of time for the purpose of ensuring the miner's safety as well as not posing a burden on them while they carry out their work activities. To use such a device for persons with illnesses requiring the transmittal of oxygen would be obvious so that they may continue their normal daily routines without the burden of a heavy device or constantly refilling the device.

13. **As to claim 29**, Nicastro discloses a vent valve (**34**).

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14. **As to claim 30**, Nicastro discloses all of the limitation of the base claim as but does not explicitly state that the vent valve may be open when the Lox container is being filled. However, from the embodiment disclosed in and the specification it can be seen that when the tank is being filled through one of the conduits the vent valve is in such a configuration that it may or may not release any gases or liquids because there is a series of valves that would first have to be opened in order for the vent valve to disperse any particulates. Therefore it would be obvious to one having ordinary skill in the art at the time of the invention that the valve can be opened or closed during the filling of the tank without changing the function of the apparatus.

15. **As to claim 32**, the prior art essentially discloses all of the limitation of the base claim except for wherein the said oxygen gas delivery device is a multi-lumen annular conduit. However the use of a multi-lumen annular conduit such as a nasal cannula as an oxygen gas delivery device is old and well known in the respiratory art. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the oxygen gas delivery device with any other oxygen gas delivery device since the function of the oxygen gas delivery device (to deliver gas to the user) is not altered by the type of device used to delivery of the oxygen gas.

16. **As to claim 33**, Nicastro teaches an inter-unit oxygen gas transfer connector (15).

17. **As to claim 34**, Nicastro teaches a check valve (38) that prevents the backflow of gaseous oxygen through the inter-unit oxygen gas transfer connector.

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18. **As to claim 35**, it does not further limit claim 22 and is substantially equivalent in scope and is rejected upon the same basis as stated prior.

19. **As to claim 37**, the reference does state that the use of the oxygen delivery device is intended for miners (**page 3, lines 97-101**). If they are to hold this device on their back while working it would be obvious to one having ordinary skill in the art at the time of the invention that the apparatus must be light in weight, no more than 5 pounds for the purpose of not posing a burden on them while they carry out their work activities.

20. **As to claim 38**, it does not further limit claim 22 and is substantially equivalent in scope. It is therefore rejected upon the same basis as the rejection of claim 22.

21. **As to claim 39**, the reference does state that the use of the oxygen delivery device is intended for miners (**page 3, lines 97-101**). The job function of a miner is tedious and requires the workers to be in a mine for a long period of time. They would not be able to constantly refill their oxygen delivery device or be able to monitor it while performing such a dangerous task. Therefore it would be obvious to one having ordinary skill in the art at the time of the invention that the apparatus could have a withdrawal rate of about 2 liters per minute with a LOX use rate up to about 1/12 pounds per hour for the purpose of providing a maximal use of the device using the leave mount of LOX. To use such a device for persons with illnesses requiring the transmittal of oxygen would be obvious so that they may continue their normal daily routines without the burden of a heavy device or constantly refilling the device.

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22. Claims 23, 24, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicastro (GB 1185199) in view Andonian (U.S. 5,357,758).

23. **As to claim 23**, Nicastro discloses an economizer valve (30) that opens to allow oxygen gas from a gaseous headspace (9) to pass through (**page 2, lines 72-74**) when the pressure exceeds a predetermined threshold level. Nicastro does not explicitly state that the economizer valve is otherwise closed to allow oxygen gas to pass through. Andonian discloses a cryogenic fluid Dewar container for supplying gas to a patient or any user on demand. Andonian then goes on to teach the use of an economizer valve (88) to move liquid and/or gas held inside the inner shell directly to the second exothermic heat energy conduction means when the internal pressure exceed a predetermined level; i.e., the economizer valve serves as a bypass loop (**col. 5, lines 54-65, col. 6 lines 1-21**). Andonian teaches that the economizer valve allows oxygen gas from a gaseous head-space to pass through when the pressure of oxygen gas in the container exceed a predetermined level and otherwise is closed and allows oxygen gas from evaporated LOX to pass through (**col. 9, lines 4-59**). Nicastro and Andonian are analogous art because they are from a similar problem solving area of dispensing gas to a person in an efficient and non-burdensome manner. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the economizer valve for the purposes as taught in Andonian in the invention of Nicastro. The motivation for this modification would have been for the purpose of keeping the pressure within the device low to ensure that the weight of the device is minimal (**col. 1,**

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lines 40-45). Therefore, it would have been obvious to combine Nicastro with Andonian to obtain the invention as specified in claim 23.

24. **As to claim 24**, in the above combination Andonian teaches that the apparatus further comprises a liquid withdrawal conduit (**12**) and a gaseous withdrawal conduit (**33**) that are in communication with the interior of the container.

25. **As to claim 26**, Nicastro discloses a withdrawal warming coil (**26**).

26. **As to claim 27**, the above combination teaches essentially all of the limitations except for wherein an inner diameter of said liquid withdrawal warming coil is greater than the inner diameter of said liquid withdrawal conduit. However, Applicant on page 11, lines 5-6 discloses that the inner diameter of liquid withdrawal warming coil **may be** greater than that of the liquid withdrawal conduit implying that such feature is not essential and/or necessary to the invention. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention that the liquid withdrawal warming coil as taught by the above combination would perform equally as well to withdraw the liquid.

27. **As to claim 28**, Nicastro discloses an economizer with a relief valve (**31**) as does Andonian (**86**).

28. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nicastro (GB 1185199) in of Leonard et al. (U.S. 4,211,086)

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29. **As to claim 31**, Nicastro teaches essentially all of the limitation except for a demand flow control device for adjustment of gas flow through said portable-unit oxygen gas transfer connector. However, Leonard et al in a LOX breathing system teaches a demand flow control device (43,68) so that the user can control the flow of oxygen gas that is to be consumed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a demand flow control device as taught by Leonard et al. so that the user can control the flow of oxygen gas that is to be consumed.

Allowable Subject Matter

30. Claims 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiandra C. Lewis whose telephone number is 571-272-7517. The examiner can normally be reached on Mon-Thurs 9AM-6PM and alternating Fridays 9AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCL


Henry Bennett
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